

DATE 0004Z 05 JUN 1963

SECRET

1	4
2	5
3	6

TO : DIRECTOR 25X1A
 FROM : [REDACTED]
 ACTION: OSA (1-15)
 INFO : S/C (16)

*123 Cross
File*

cc [Signature]

PRIORITY

IN 78670

25X1A TOR: 0223Z 05 JUN 1963

25X1A

TO PRITY [REDACTED] INFO [REDACTED] CITE [REDACTED] 6922

OX CART

TO DR. SCOVILLE INFO J. PARANGOSKY AND COL. LEDFORD FROM KELLY JOHNSON
 REF: [REDACTED] 9733

REFERRING TO PHONECON WITH JOHN THIS MORNING AND ABOVE REFERENCE,
 THE FOLLOWING COMMENTS ARE OFFERED.

1. TESTS ON AIRCRAFT NUMBER 124 THIS MORNING HAVE DEMONSTRATED
 TO [REDACTED] SATISFACTION THAT NO PROBLEM EXISTS IN INCREASING AIR
 SPEED FROM SPEEDS DOWN TO 129 KNOTS AROUND 30,000 FEET. IT WAS
 APPARENT THAT WE COULD GO TO LOWER SPEEDS READILY AND STILL MAINTAIN
 SATISFACTORY PITCH CONTROL.

2. OTHER STUDIES THROUGH TODAY INDICATE THAT THERE IS NO
 REASON, IN OUR OPINION, WHY WE SHOULD NOT RESUME FLYING ALL AIRCRAFT
 AT ONCE.

3. REGARDING ITEM 2A (1) OF REFERENCE, USE OF DUAL INVERTER
 SOURCE FOR INSTRUMENTS HAS BEEN IN PROCESS OF ENGINEERING FOR
 APPROXIMATELY THREE MONTHS. NUMBER 121 AIRCRAFT IS NOW SO EQUIPPED FOR
 TEST. WE ARE PROVIDING ECP FOR INCORPORATION IN ALL AIRCRAFT ON A
 IS NO INDICATION THAT THE ELECTRICAL SYSTEM
 PLANNED BASIS, BUT THERE

SECRET

GROUP 1
 Excluded from automatic
 downgrading and
 declassification

9

25X1A

S E C R E T

6922 (IN 78670)

PAGE TWO

FAILED ON AIRCRAFT NUMBER 123 PRIOR TO THE CRASH.

4. WE HAVE CONSIDERED INSTALLATION OF CRASH RESISTANT FLIGHT RECORDERS AND HAVE THE FOLLOWING COMMENTS TO OFFER.

A. THERE ARE APPROXIMATELY 1200 CRASH RECORDERS INSTALLED ON AIRLINE AND OTHER AIRCRAFT AT THIS TIME. 750 OF THESE ARE LOCKHEED TYPE 109C. THIS UNIT WEIGHS 29 POUNDS, NOT INCLUDING DATA PICKOFF SYSTEMS OR WIRING. IT RECORDS FIVE CHANNELS OF INFORMATION -- NAMELY, HEADING, ALTITUDE, TIME, AIR SPEED, AND NORMAL ACCELERATION. THIS UNIT HAS DEMONSTRATED A HIGH DEGREE OF RELIABILITY AND SEVICABILITY -- IN CRASHES, AND IT IS AVAILABLE IMMEDIATELY FOR ABOUT \$4,000 PER UNIT. OUR SERVICE COMPANY ARE ALSO BUILDING A MORE SOPHISTICATED SYSTEM KNOWN AS THE LOCKHEED MAINTENANCE RECORDER SYSTEM. (LMRS). THIS BASIC UNIT WEIGHS 80 POUNDS WITHOUT WIRING OR PICKOFF ELEMENTS, HAS 350 CHANNELS FOR DATA AND A CRASH-PROOF CASSETTE TO ENCLOSE THE TAPE. THIS UNIT IS BEING FLOWN EXPERIMENTALLY BY TWA, WHO ARE USING 211 CHANNELS. THE UNIT COSTS \$12,000 AND REQUIRES A \$70,000 GROUND READOUT SYSTEM. DELIVERY IS ABOUT 90 DAYS.

B. THERE ARE TWO OTHER FAA APPROVED CRASH RECORDERS, ONE BEING THE WASTE KING UNIT BUILT BY FAIRCHILD. IT HAS THE SAME FIVE DATA CHANNELS AS THE LAS MODEL 190C. IT IS ABOUT \$1,000 MORE EXPENSIVE. MOST OF THE OTHER UNITS IN SERVICE OUTSIDE OF THE 109C ARE THIS WASTE KING TYPE.

C. A FEW UNITED DATA CONTROL RECORDERS ARE IN SERVICE ON SMALLER AIRCRAFT. COST IS ABOUT THE SAME AS FOR THE WASTE KING AND THE SAME NUMBER OF CHANNELS ARE PROVIDED.

S E C R E T

25X1A

S E C R E T

6922 (IN 78670)

PAGE THREE

D. ALL THREE OF THESE UNITS CAN, WITH ADDED EXPENSE, AND ADDED TIME, BE PROVIDED WITH MORE CHANNELS.

E. I DO NOT RECOMMEND THE INSTALLATION OF ANY OF THE ABOVE UNITS. I BELIEVE THE APPROACH USED FOR [REDACTED] CURRENTLY BEING STUDIED FOR OXCART, IS MUCH BETTER. IT WILL, OF COURSE, REQUIRE CONSIDERABLE DEVELOPMENT, BUT IT WILL PROVIDE A MORE SPECIALIZED TYPE OF INFORMATION, DESIRABLE FOR THE A-12 OPERATION. WITH ONLY FIVE TO TEN CHANNELS, AT MOST, AVAILABLE TO US AT AN EARLY DATE, I DO NOT THINK THE ABOVE UNITS WOULD BE OF ANY IMPORTANT SIGNIFICANCE IN SOLVING A-12 CRASH PROBLEMS. ALSO, IN ALL CASES, THE INSERTION OF ADDED SENSING ELEMENTS IN OUR EXISTING CIRCUITS AND AIR SPEED SYSTEMS PROVIDES ADDED HAZARDS AND IS CONTRARY TO OUR BASIC DESIGN PHILOSOPHY OF TRYING TO OBTAIN SAFETY THROUGH SIMPLICITY. YOU SHOULD BE AWARE, ALSO, THAT NONE OF THESE UNITS IS ADAPTED TO HIGH TEMPERATURE OPERATION FOR PROLONGED PERIODS, AND THEIR INSTALLATIONS ARE VERY COMPLEX, PARTICULARLY THAT OF THE LMRS. IN NO CASE DO I BELIEVE IT IN ORDER TO DELAY FURTHER FLYING UNTIL A CRASH RECORDER IS INSTALLED.

5. REGARDING ITEM 2A3 OF REFERENCE, I HAVE THE FOLLOWING COMMENTS. I BELIEVE THAT AN ANGLE OF ATTACK INDICATOR ON THE A-12 IS TOTALLY UNNECESSARY BECAUSE ALL NORMAL FLYING, INCLUDING TOUCHDOWN ON LANDING, IS DONE AT ANGLES OF ATTACK OF 12 DEGREES OR LESS. WE HAVE A MARGIN OF AN ADDITIONAL 10 TO 12 DEGREES, WHICH IS APPROXIMATELY THREE TIMES GREATER THAN WHAT WE HAVE ON MOST OTHER TYPES OF AIRCRAFT. WE DO NOT HAVE ANGLE OF ATTACK CHANGES DUE TO THE USE OF FLAPS, SLATS, POWER, OR EVEN THE LANDING GEAR. THE SIMPLEST

S E C R E T

25X1A

S E C R E T

6922 (IN 78670)

PAGE FOUR

SOLUTION WOULD BE TO RED LINE THE NORMAL AIR SPEED INDICATOR AT ABOVE 140 OR 150 KNOTS AND INSTRUCT THE PILOTS NEVER TO FLY LESS THAN THIS AIR SPEED EXCEPT ON TOUCHDOWN. I WOULD LIKE TO REMIND YOU THAT WE ALREADY HAVE A WARNING LIGHT THAT COMES ON TO TELL THE PILOT WHEN HE IS BELOW A FLIGHT MACH NUMBER OF .47 AND THIS INDICATION DID TAKE PLACE DURING THE RECENT ACCIDENT. IF THE PILOT WILL NOT OBSERVE THE ORDINARY AIR SPEED INDICATOR, WE HAVE NO ASSURANCE THAT HE WOULD NOTE AN ANGLE OF ATTACK INDICATOR. THE UNIT INSTALLED IN AIRCRAFT NUMBER 121 IS FOR THE PURPOSE OF ENGINEERING TESTS TO DETERMINE FACTORS AFFECTING INLET DUCT AND GENERAL STABILITY AND CONTROL FACTORS. INSTRUMENT BOARD SPACE IS VERY CRITICAL. CONSIDERING ALL THE ABOVE FACTORS, I RECOMMEND THE EQUIVALENT APPROACH OF RED LINING THE NORMAL AIR SPEED INDICATOR AND INSERTING PROPER STATEMENTS AND INSTRUCTIONS IN OUR TRAINING COURSES.

6. REGARDING ITEM 2A(4) OF REFERENCE, I AGREE POSITIVELY THAT [REDACTED] MUST, IN ALL CASES, MAKE TESTS FIRST BEFORE EXPECTING PROJECT PILOTS TO EXPLORE ANY CONDITIONS WHICH WE HAVE ENCOUNTERED. THIS HAS BEEN AND WILL BE OUR POLICY IN ALL CASES EXCEPT TESTING CERTAIN PAYLOAD PACKAGES, AS WE HAVE AGREED WITH YOU PREVIOUSLY, IN THE INTEREST OF MAKING BEST USE OF THE AIRCRAFT TIME. WE HAVE FLOWN OUR AIRCRAFT ON FLIGHTS AS LONG AS OR LONGER THAN THAT IN WHICH NUMBER 123 WAS ENGAGED. FUEL TEMPERATURES THROUGHOUT THE SYSTEM WERE MEASURED, INCLUDING THE LAST MINUTE QUANTITY OF FUEL IN A TANK, AND THEY WERE FOUND TO BE NOT CRITICAL. THIS DATA HAS

Approved For [REDACTED] 5 : CIA-RDP71B00590R000200030002-0

END OF MESSAGE

S E C R E T